CLAIMS

What is claimed is:

1. A method comprising:

increasing a power level of a wireless transmission if a number of packet errors in a short observation window exceeds a first threshold; and

decreasing the power level of the wireless transmission if a number of packet errors in a long observation window falls below a second threshold.

2. The method of claim 1 further comprising:

increasing the power level of the wireless transmission if the number of packet errors in the long observation window exceeds a third threshold.

3. The method of claim 1 wherein increasing the power level comprises:

counting the number of packet errors during the short observation window; and

comparing the number of packet errors during the short observation window to the first threshold.

4. The method of claim 1 wherein decreasing the power level comprises:

counting the number of packet errors during the long observation window; and

comparing the number of packet errors during the long observation window to the second threshold.

5. The method of claim 1 wherein increasing and/or decreasing the power level comprise an open loop power control method comprising:

receiving a plurality of data packets comprising the wireless transmission from a remote source;

performing a cyclic redundancy check (CRC) on each of the plurality of packets, wherein a CRC failure indicates a packet error; and

sending a negative acknowledgement (NACK) message to the remote source for each CRC failure, said remote source to count a number of NACK messages corresponding to the number of packet errors in the short observation window and a number of NACK messages corresponding to the number of packet errors in the long observation window, and said remote source to increase and/or decrease the power level accordingly.

6. The method of claim 1 wherein increasing and/or decreasing the power level comprise an open loop power control method comprising:

sending a plurality of packets of data comprising the wireless transmission to a remote destination, said remote destination to perform a cyclic redundancy check (CRC) on each of the plurality of packets, wherein a CRC failure indicates a packet error;

receiving a negative acknowledgement (NACK) message from the remote destination for each CRC failure;

counting a number of NACK messages corresponding to the number of packet errors in the short observation window and increasing the power level accordingly; and

counting a number of NACK messages corresponding to the number of packet errors in the long observation window and decreasing the power level accordingly.

7. The method of claim 1 wherein increasing and/or decreasing the power level comprise a closed loop power control method comprising:

receiving a plurality of packets of data comprising the wireless transmission from a remote source;

performing a cyclic redundancy check (CRC) on each of the plurality of packets, wherein a CRC failure indicates a packet error;

counting a number of CRC failures in the short observation window;

sending an instruction to the remote source to increase the power level if the number of CRC failures in the short observation window exceeds the first threshold;

counting a number of CRC failures in the long observation window; and

sending an instruction to the remote source to decrease the power level if the number of CRC failures in the long observation window is below the second threshold.

8. The method of claim 7 wherein the closed loop power control method further comprises:

sending the instruction to the remote source to increase the power level if the number of CRC failures in the long observation window exceeds a third threshold.

9. The method of claim 7 wherein the instruction to increase the power level and the instruction to decrease the power level comprise Link Manager Protocol (LMP) instructions.

10. The method of claim 1 wherein the wireless transmission comprises a first wireless transmission generated by a transmitter located in close proximity to a receiver, said receiver to simultaneously receive a second wireless transmission, said first wireless transmission to create an interference signal in the second wireless transmission in proportion to the power level of the first wireless transmission, and wherein increasing and/or decreasing the power level comprise:

maintaining a target average packet error rate using a lowest average power level of the first wireless transmission.

11. The method of claim 1 wherein the target average packet error rate is 0.01.

12. The method of claim 1 wherein the power level of the wireless transmission has a 30 dB range and the power level is adjustable in 2 dB steps.

13. The method of claim 1 wherein the short observation window is 35 contiguous packets, the long observation window is 135 contiguous packets, the first threshold is one packet error, and the second threshold is one packet error.

14. The method of claim 2 wherein the third threshold is three packet errors.

15. The method of claim 1 wherein the wireless transmission comprises a Bluetooth data link.

16. An apparatus comprising:

a counter to count packet errors in a wireless transmission, said counter to count a number of packet errors in a short observation window and to count a number of packet errors in a long observation window;

a comparator to compare the number of packet errors in the short observation window to a first threshold and to compare the number of packet errors in the long observation window to a second threshold; and

a controller to increase a power level of the wireless transmission if the number of packets in the short observation window exceeds the first threshold and to decrease the power level of the wireless transmission if the number of packet errors in the long observation window falls below the second threshold.

17. The apparatus of claim 16 wherein the comparator is further to compare the number of packet errors in the long observation window to a third threshold, and

wherein the controller is further to increase the power level of the wireless transmission if the number of packet errors in the long observation window exceeds a third threshold.

18. The apparatus of claim 16 wherein said wireless transmission comprising a plurality of packets of data sent to a remote destination, said remote destination to perform a cyclic redundancy check (CRC) on each of the plurality of packets, each said CRC failure to indicate a packet error;

said counter to receive a negative acknowledgement (NACK) message from the remote destination for each CRC failure, count a number of NACK messages corresponding to the number of packet errors in the short observation window, and count a number of NACK messages corresponding to the number of packet errors in the long observation window.

19. The apparatus of claim 16 wherein said wireless transmission comprises a plurality of packets of data received from a remote source, the apparatus further comprising:

an input device to receive the plurality of packets of data and perform a cyclic redundancy check (CRC) on each of the plurality of packets, each said CRC failure to indicate a packet error;

said counter to count a number of CRC failures in the short observation window and a number of CRC failures in the long observation window; and

said controller to send an instruction to the remote source to increase the power level if the number of CRC failures in the short observation window exceeds the first threshold and to send an instruction to the remote source to decrease the power level if the number of CRC failures in the long observation window is below the second threshold.

20. The apparatus of claim 19 wherein the controller is further to send the instruction to the remote source to increase the power level if the number of CRC failures in the long observation window exceeds a third threshold.

21. The apparatus of claim 19 wherein the instruction to increase the power level and the instruction to decrease the power level comprise Link Manager Protocol (LMP) instructions.

22. The apparatus of claim 16 wherein the counter comprises:

a plurality of registers coupled in a serial chain, said plurality of counters to receive a stream of packet status indications at a head of the serial chain, said plurality of registers to clock the stream of packet status indications through the plurality of registers;

a first adder to add the number of packet errors in the short observation window from among packet status indications at a first set of the plurality of registers comprising the short observation window and to provide a first result to the comparator; and

a second adder to add the number of packet errors in the long observation window from among packet status indications at a second set of the plurality of registers comprising the long observation window and to provide a second result to the comparator.

23. The apparatus of claim 16 further comprising:

a plurality of registers to programmably store the first threshold and the second threshold, and to provide the first threshold and the second threshold to the comparator.

24. The apparatus of claim 16 further comprising:

a packet counter to count a number of packets in the wireless transmission and provide the number of packets to the controller, said controller to decrease the power level of the wireless transmission based on the long observation window only after the number of packets fills the long observation window.

25. A machine readable medium having stored thereon machine readable instructions to implement a method comprising:

increasing a power level of a wireless transmission if a number of packet errors in a short observation window exceeds a first threshold; and

decreasing the power level of the wireless transmission if a number of packet errors in a long observation window falls below a second threshold.